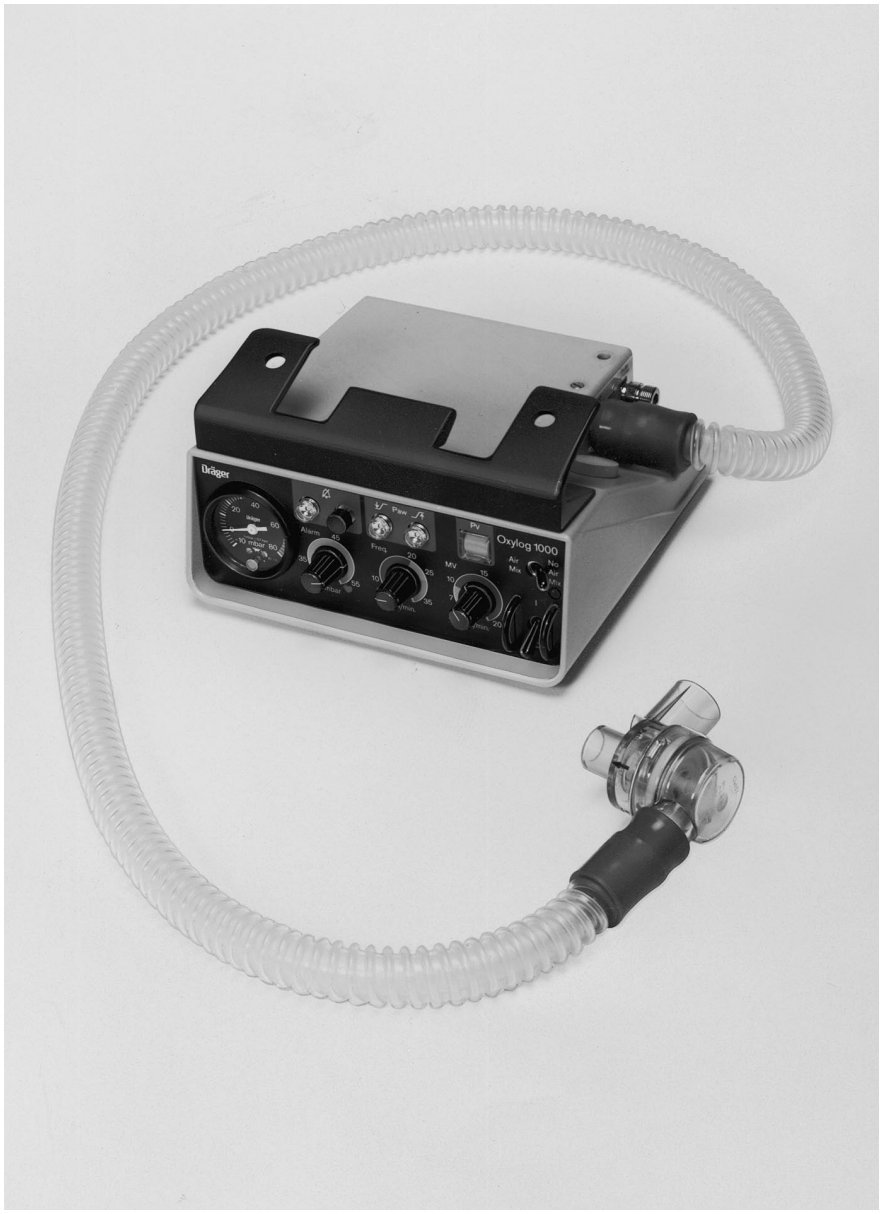
Oxylog 1000

Emergency ventilator

Instructions for Use



MT 215-98

Contents

For Your Safety and That of Your Patients 3

Intended use 4

Before using for the first time 4

Operating concept 5

Operation 6
Oxylog 1000 Device Check 6
IPPV controlled ventilation 7
Ventilation with PEEP 9
Use in toxic environment 9
End-expiratory volume measurement 10
End of operation 10

Care 11
Dismantling 11
Disinfecting/Cleaning 12
Sterilising 13

Preparation 14
Mounting the ventilation valve 14
Installing the Oxylog 1000 15
Connecting the O_2 supply 16

Checking readiness for operation 18
Checking ventilation frequency Freq. 18
Testing the »Paw ⩘« alarm 19
Testing the »Paw ⩗« alarm 19
Checking the »Pv« alarm 20

Troubleshooting 21

Maintenance intervals 22

What's what 23
Front view 23
Side view 24

Technical data 25

Abbreviations and symbols 28

Appendix 29

Order List 30

Index 31

For Your Safety and that of Your Patients

Strictly follow the Instructions for Use

Any use of the apparatus requires full understanding and strict observation of these instructions. The apparatus is only to be used for purposes specified here.

Instandhaltung

The apparatus must be inspected and serviced every two years by trained service personnel (and a record kept). Repair and general overhaul of the apparatus may only be carried out by trained service personnel.
We recommend that a service contract be obtained with DrägerService and that all repairs also be carried out by them. Only authentic Dräger spare parts may be used for maintenance.
Observe chapter "Maintenance Intervals".

Safety inspections

The apparatus must be submitted to regular safety inspections.

Accessories

Do not use accessory parts other than those in the order list.

Liability for proper function or damage

The liability for the proper function of the apparatus is irrevocably transferred to the owner or operator to the extent that the apparatus is serviced or repaired by personnel not employed or authorized by DrägerService or if the apparatus is used in a manner not conforming to its intended use.

Dräger cannot be held responsible for damage caused by non-compliance with the recommendations given above. The warranty and liability provisions of the terms of sale and delivery of Dräger are likewise not modified by the recommendations given above.

Dräger Medizintechnik GmbH

Intended use

Oxylog 1000 – timer-controlled, constant-volume emergency ventilator for the controlled ventilation of patients with a body weight of at least 7.5 kg.

With display

of the airway pressure Paw

With monitoring

of the airway pressure Paw,

of the O_2 supply Pv

Applications

Mobile application in emergency medicine or first aid for emergency patients

During transport in land, air and sea rescue systems

During transfer journeys, by land, sea or air

When transferring artificially ventilated patients inside the clinic

During secondary transfer from clinic to clinic

In the casualty department

Ventilation monitoring

During ventilation, the patient must be constantly monitored by qualified medical personnel.

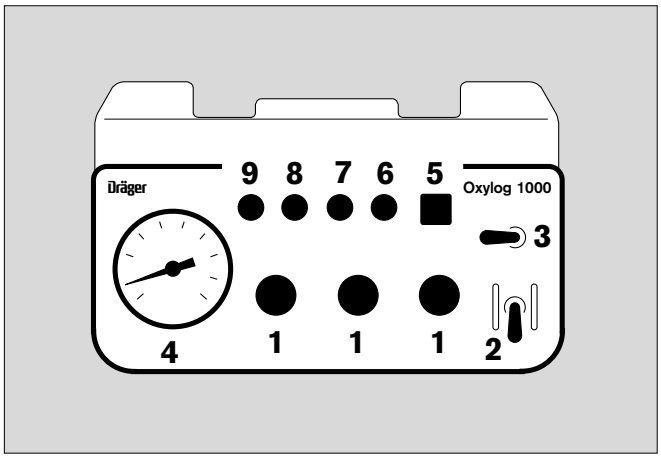
Standby manual ventilation system

If the life-preserving function of the ventilator is no longer guaranteed due to a fault, the patient must immediately be ventilated with an alternative independent ventilating device, e.g. with a self-filling manual breathing bag.

Before using for the first time

- The supplied self-adhesive notices containing the abridged Instructions for Use and identifying the gas ports must be stuck to the machine as shown.

Operating concept



1 Three rotary control knobs are located in the middle of the front panel for setting the upper alarm limit for airway pressure (»**Paw**«), the ventilation rate (»**Freq.**«) and the minute volume (»**MV**«).

Uniform colour codes are used to identify different scale ranges of the »**Freq**« and »**MV**« knobs to help rapid presetting: with these colour-coded scales, the parameters are adapted to the relevant patient group: infants (green) / children (blue) / adults (brown).

2 The **main switch 0/I** for switching the ventilator on and off is in the bottom right-hand corner of the front panel.

3 With the »**Air Mix/No Air Mix**« switch, the user can choose between approx. »**60 Vol.% O_2**« and »**100 Vol.% O_2**«.

4 The pressure gauge shows the inspiratory **airway pressure**.

The flag indicators for the alarms are located above the rotary control knobs for »**Freq.**«, »**MV**« and »**Paw**«:

5 »**Pv**« Flag indicator
Green if the supply pressure is sufficient.
Red if the supply pressure is insufficient.

6 Indicator for the upper alarm limit »**Paw** ⎍ «.
Red if the airway pressure exceeds the maximum limit.

7 Red indicator for lower alarm limit »**Paw** ⎍ «.
Red if the airway pressure falls below the minimum limit.

8 Button » 🔔 « for muting the audible alarm tone.

9 Indicator » 🔔 « turns yellow when the alarm tone is muted.

Operation

Oxylog 1000 Device Check

The device check must be carried out before each use. Any operation of the device requires thorough knowledge of the Instructions for Use.

Type:	
Serial No.:	

Check the following points before starting up the device:

- O_2 pressure supply connected ☐
- Cylinder pressure at least 100 bar or ventilator connected to the central O_2 supply ☐
- Ventilation valve and ventilation hose connected ☐

Testing correct operation

- Fit the test lung to the ventilation valve.
  Set the device:

MV	approx. 10 L/min
Freq.	approx. 20 bpm
Paw Alarm	approx. 55 mbar
Main switch	I (ON)
Switch	No Air Mix

Oxylog 1000 must ventilate the test lung. ☐

- Squeeze the test lung, so that the airway pressure is approx. 60 mbar.

The »Paw ⚠« indicator turns red, and the audible alarm is sounded. ☐

- Remove the test lung:

The »Paw ⚠« indicator turns red, and the audible alarm is sounded. ☐

In the event of deviations, see "Troubleshooting" in these Instructions for use.

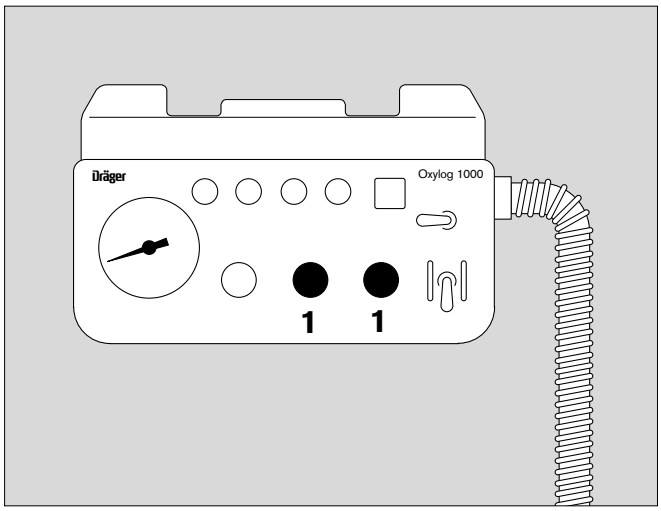
Device check completed

Name:	
Date:	

Use a prepared, operable and disinfected device.
Care, page 11.
Preparation, page 14.
Checking device ready for operation, page 18.

IPPV controlled ventilation

For ventilation frequencies of 5 to 40 breaths per minute.



For rapid presetting, uniform **colour-coded** scale ranges can be used for the rotary control knobs for the ventilation rate **Freq.** and minute volume **MV**. With these ranges, the ventilation parameters are adapted to the patient group:

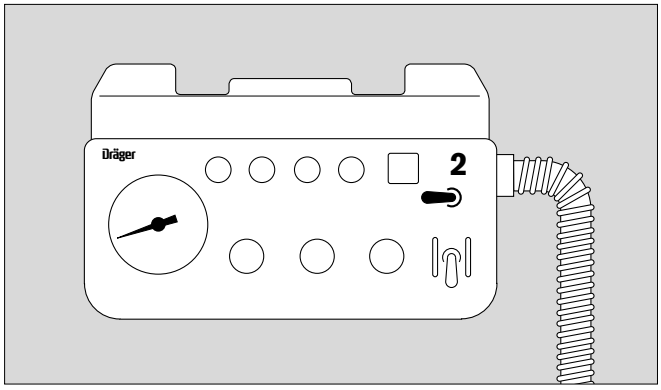
Infants / Children / Adults

1 Presetting the »**Freq.**« and »**MV**« control knobs:

Body weight kg	**Freq.** (bpm)	**MV** L/min
Green range for infants (7.5 to 20)	28 to 40	3 to 5
Blue range for children (20 to 40)	20 to 28	5 to 9
Brown range for adults (as from 40)	5 to 20	9 to 20

2 Set the desired O_2 concentration with the switch:

Air Mix approx. 60 % O_2 by volume
or
No Air Mix = 100 % O_2 by volume



In Air Mix mode, the applied tidal volume V_T is reduced at high airway pressures due to the physical characteristics of the injector (see also page 29 in the appendix).

Use the O_2 monitor to detect any error in the O_2 mixture.

When the patient is connected:

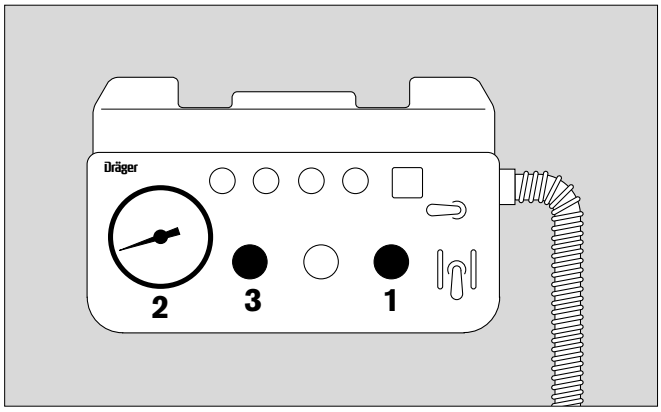
1 Check the **MV** setting and adjust according to the patient.

2 Check the airway pressure on the pressure gauge.

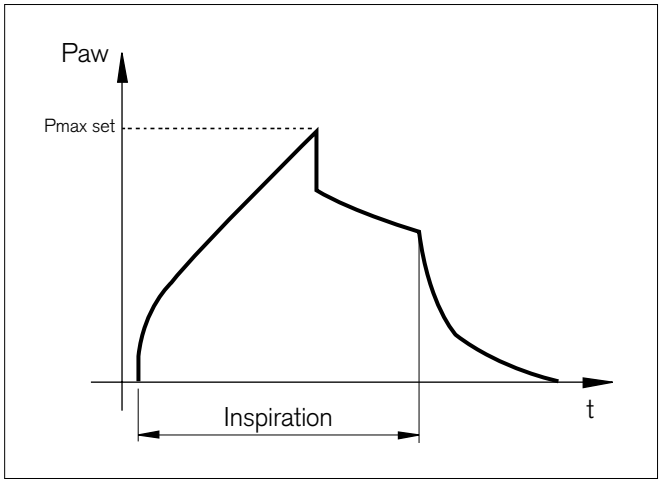
3 Set »**Paw**« to the desired Pmax.

The »**Paw**« setting limits the airway pressure. If the set »**Paw**« value is exceeded, the airway pressure is reduced below the Pmax value. Inspiration is continued. See the graph Paw (t).

Watch the pressure gauge and take note of alarm conditions in order to recognise incorrect ventilation at an early stage and prevent danger to the patient.



By limiting the pressure during the inspiration time, a pressure limited, inconstant volume, controlled ventilation pattern is obtained.



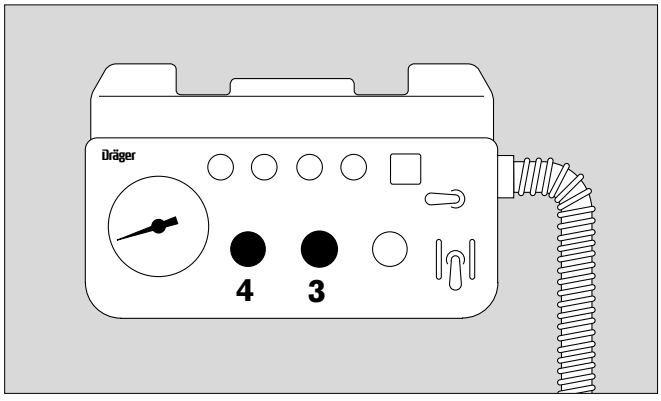
For heart-lung resuscitation

For resuscitation of adults using the "two helper method":

3 Set the »**Freq.**« knob to the heart symbol ♥ , approx. 12 breaths per minute.

4 Set the »**Paw**« knob to the heart symbol ♥ , approx. 55 mbar.

Pressure limiting is activated. On reaching the peak pressure, under certain conditions, the tidal volume is not fully applied.



Ventilation with PEEP

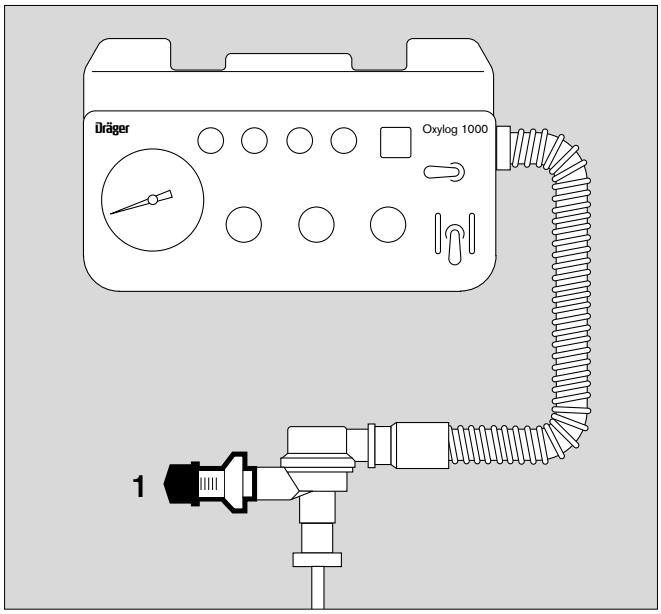
(Special accessory)

Gebrauchsanweisung des PEEP-Ventils beachten.

1 Set the PEEP valve to 0 mbar = turn the knob counter-clockwise as far as it will go and fit it to the waste gas connector of the ventilation valve

Set PEEP = turn knob.
The end-expiratory pressure is increased by the set PEEP value.

The PEEP pressure is not displayed on the pressure gauge.



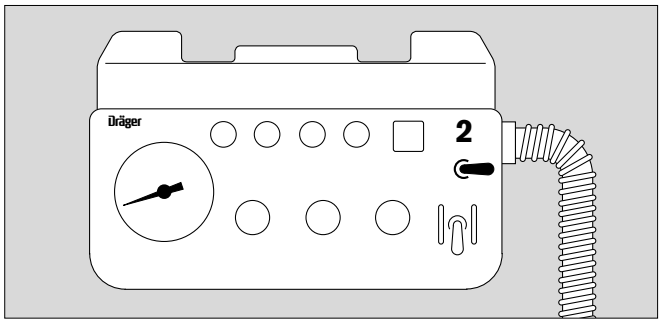
Use in toxic environment

Oxylog 1000 can be used for controlled ventilation of accident victims in a toxic environment.

For use in toxic environment:

2 Set the switch to »**No Air Mix**«: the device will supply 100% O_2 by volume.

If spontaneous breathing is present or restored, e.g. after resuscitation, partial spontaneous inspiration of toxic gases is **not** prevented by Oxylog 1000. **Immediately move the patient to a breathable environment in order to prevent the patient inhaling toxic atmospheric air when spontaneous breathing is restored.**



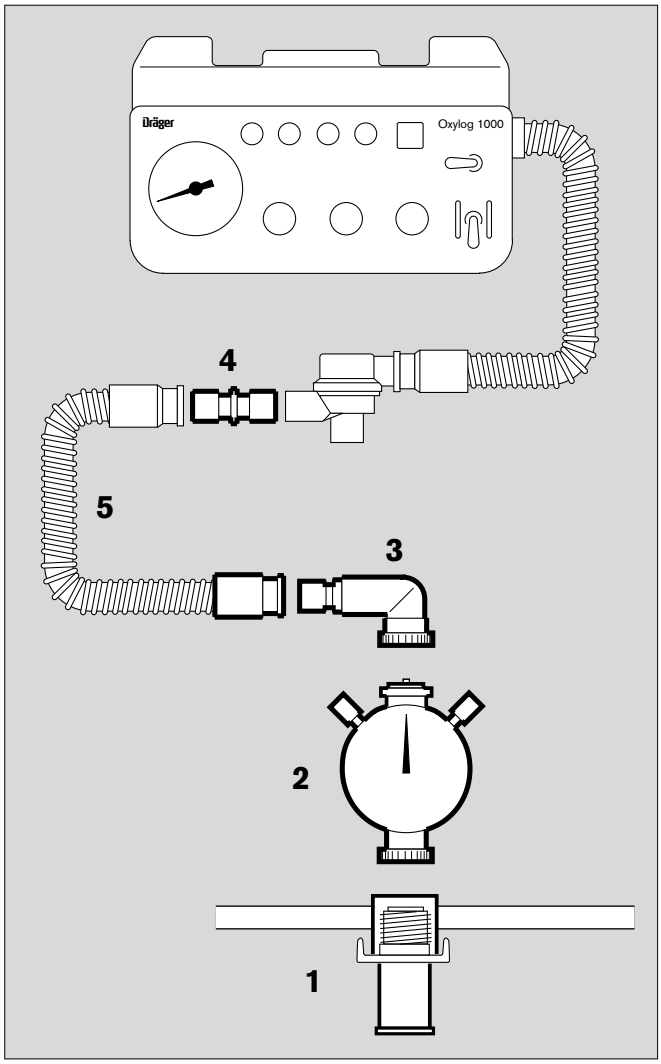
Only for stationary use!

End-expiratory volume measurement

(Special accessory)

To measure the end-expiratory tidal volume and end-expiratory minute volume.

Cannot be combined with the PEEP valve.



- Strictly follow the Instructions for Use of the Volumeter 3000.

1 Clamp the Volumeter 3000 holder to the wall rail.

2 Screw the Volumeter 3000 to the holder.

3 crew the elbow connector to the Volumeter 3000.

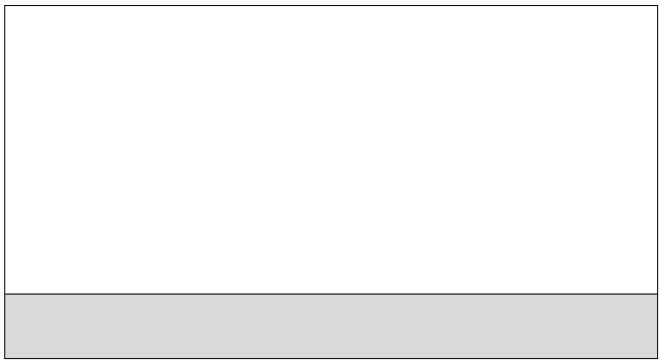
4 Insert the hose adapter in the exhaust connector of the ventilation valve.

5 Connect the ventilation valve and Volumeter 3000 with 1.5 m long ventilation hose.

End of operation

After disconnecting the patient:

6 Switch the main switch to 0.



If the Oxylog is supplied by O_2 cylinder:

- Fully close the cylinder valve.

If the Oxylog is supplied by the central mains supply:

- Remove the gas supply connector.

Care

After each operational use of the ventilator, dismantle and disinfect the ventilation valve, ventilation hose, volume metering parts and PEEP valve.

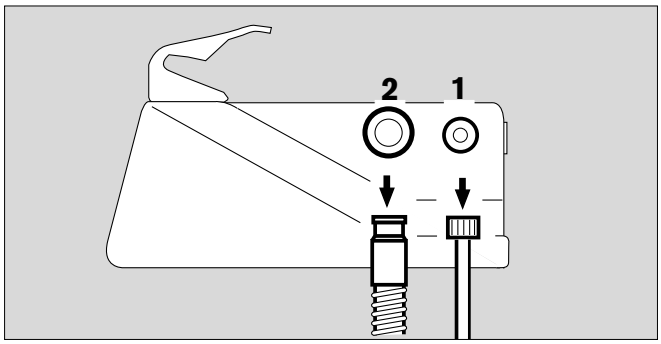
The ventilator and compressed gas hoses must also be cleaned/disinfected if severely soiled.

Dismantling

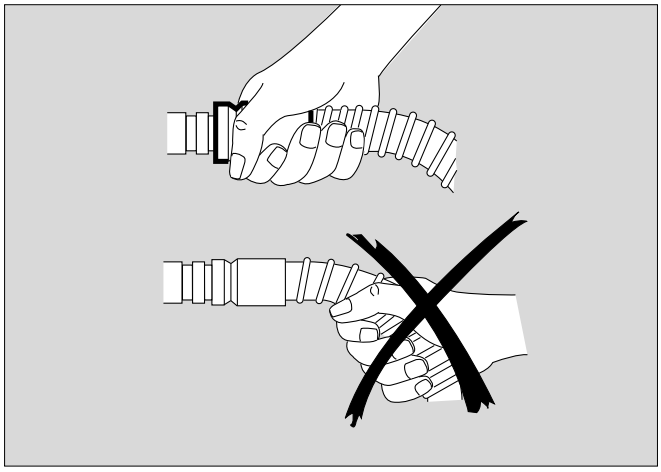
- Remove Oxylog 1000 from its holder.

1 Unscrew the O_2 compressed gas hose from the Oxylog 1000.

2 Remove the ventilation hose from the connector on the side of the ventilator.



- **To remove the ventilation hose, always grip it by the sleeve and not the spiral stiffening ridges.** Otherwise the spiral ridges may be torn, e.g. at the sleeve, or the hose may be ripped out of the sleeve.



- Remove the ventilation valve from the ventilation hose.
- Pull the PEEP valve out of the ventilation valve,

  or

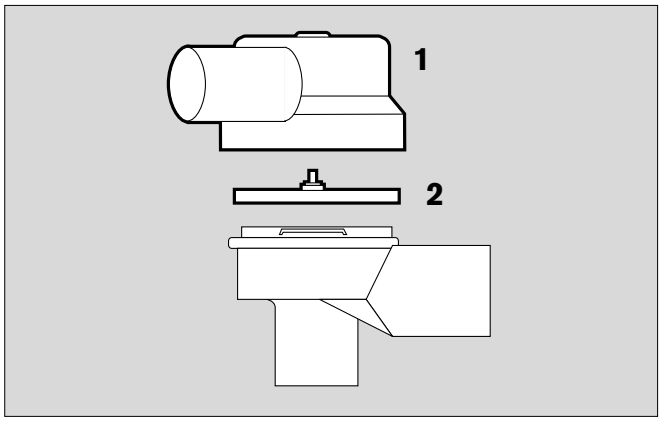
- remove and dismantle the volume metering parts.

Dismantling the ventilation valve

1 Turn the cover about 45° counter-clockwise = unlock, and remove the cover.

2 Remove the diaphragm. Do not dismantle any further.

- **Do not allow any foreign matter to enter the housing of the ventilation valve.**
  Protect the diaphragm from damage.



Disinfecting/Cleaning

Use only preparations classified as »surface disinfectants« for disinfecting. For material compatibility, we recommend preparations based on

– aldehydes,
– alcohols,
– quaternary ammonium compounds.

Due to possible damage to materials, the following preparations are unsuitable:

– compounds containing alkylamine
– compounds containing phenol
– halogen-releasing compounds
– strong organic acids
– oxygen-releasing compounds.

For users in the Federal Republic of Germany, we recommend the use of disinfectants listed in the current DGHM list (DGHM = German Society for Hygiene and Microbiology).
The DGHM list (published by mhp Verlag GmbH, Wiesbaden) also specifies the active basis of each disinfectant. For countries where the DGHM list is unavailable, we recommend products based on the above active bases.

Wipe disinfecting

Ventilator, O_2 compressed gas hose:

- Wipe disinfect with e.g. Buraton 10 F or Terralin. Strictly follow the Instructions for Use of the disinfectant manufacturer. Coarse impurities must first be removed with a disposable cloth.
- **Do not allow any liquids to penetrate inside the ventilator or O_2 compressed gas hose.** Liquid inside the system can impair ventilation.

Immersion disinfecting

Dismantled components of the ventilation valve, ventilation hose, volume metering parts, **not the Volumeter 3000:**

- Disinfect in disinfectant bath with e.g. Gigasept FF = formaldehyde-free.
  Strictly follow the Instructions for Use of the disinfectant manufacturer.
  Thoroughly stir the parts in the solution.
  Do not clean with hard brushes.
  Do not allow any foreign object to enter the inside of the ventilation valve.
- Rinse thoroughly with Aquadest.
- **Allow the parts to dry fully.** If any water remains in the ventilation valve, the ventilation function may be impaired.

Sterilising

Sterilise as follows if necessary:

Dismantled components of the ventilation valve and ventilation hose:

- sterilise in 134 °C hot steam.

PEEP valve and Volumeter 3000:

- treat as specified in their specific Instructions for use.

After care

- Preparation, page 14
- Connect the O_2 supply, page 16
- Check that the system is ready for operation, page 18.

Preparation

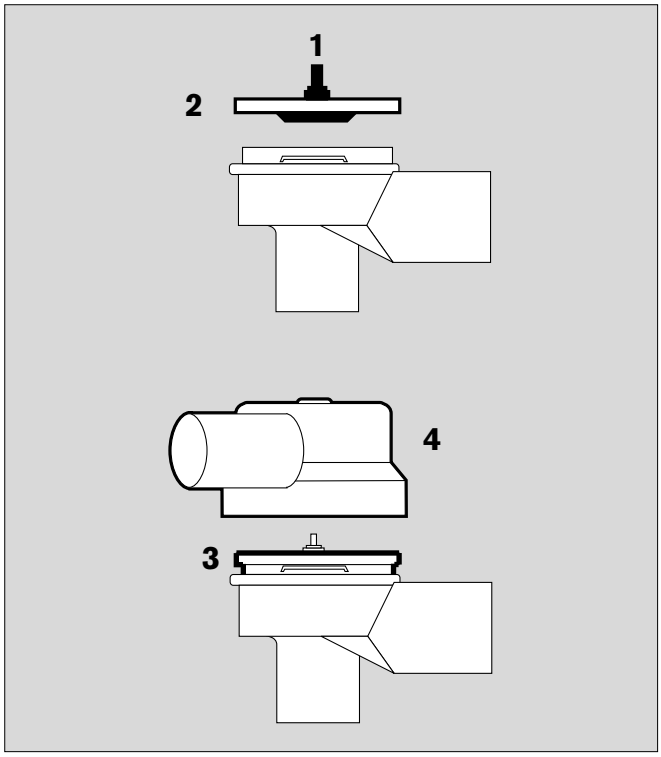
Mounting the ventilation valve

1 Check that the red non-return valve is securely seated in the diaphragm and lies flat on the diaphragm.

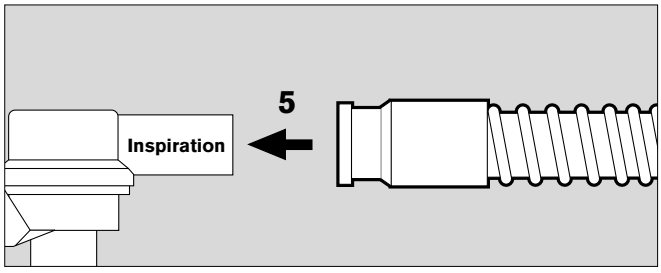
2 Insert the diaphragm in the valve housing, with the red non-return valve facing the housing.

3 The bead of the diaphragm must lie flat and flush on the edge of the housing.

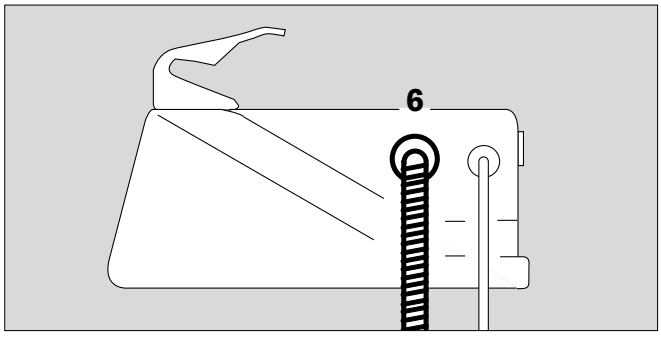
4 Fit the cover. Press down and turn 45° clockwise = lock.
Visually check that the diaphragm fits uncreased in the housing.



5 Fit the ventilation hose to the ventilation valve port marked "Inspiration".



6 Fit the ventilation hose to the connector on the ventilator.



Installing the Oxylog 1000

For stationary use:

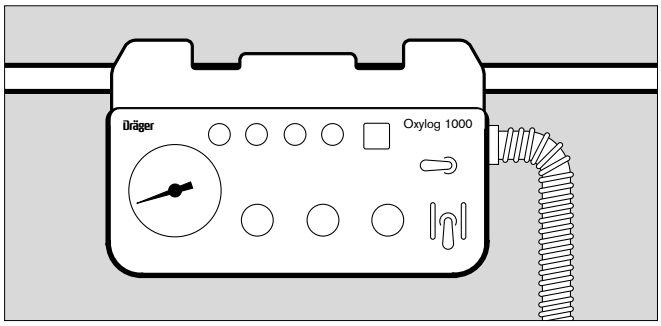
- Install on a flat surface protected against sliding or falling,

  or:

- Suspend at the head of the bed,

  or:

- Suspend on a wall rail, as illustrated.



For mobile use in vehicles:

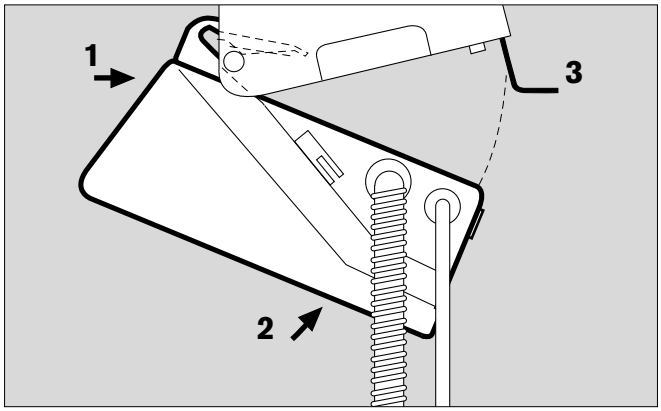
- Use the vehicle mount

1 Suspend Oxylog 1000 by its bracket on the rod of the holder.

2 Swivel the ventilator up into the holder until it clicks into place.

To pull out the ventilator:

3 Press the release catch from underneath.



Connecting the O2 supply

Take care when handling oxygen.

O2 is highly flammable and intensively propagates any source of fire.
Do not smoke or allow any naked flame in the vicinity of the O2 supply.
Protect O2 cylinders against falling, and do not expose them to intense heat.

Do not oil or grease O2 fittings, such as cylinder valves and pressure-reducing valves, and do not handle these parts with greasy hands. Fire risk.

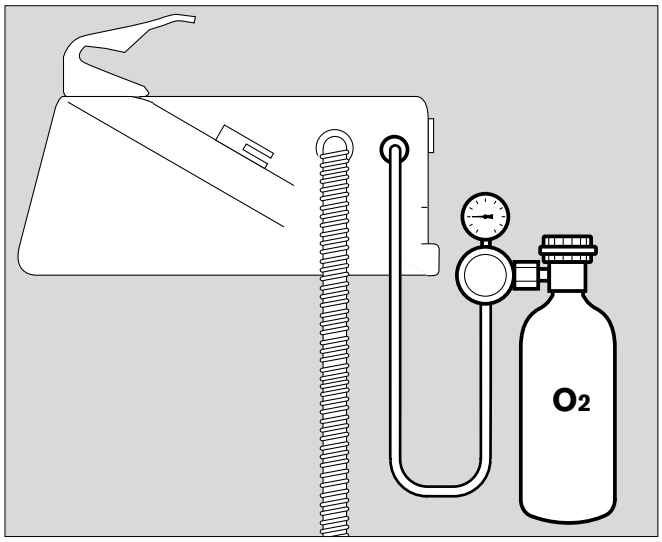
Only open/close cylinder valves by hand, turning evenly. Never use a tool to open/close the valves.

For supply by O2 cylinder

Use only compressed gas cylinders that conform to national safety standards and have been duly approved.

Use full cylinders with 200 bar cylinder pressure.

- Screw a pressure-reducing valve to the O2 cylinder (for outlet pressure 2.7 to 6.0 bar, nominal pressure 5 bar).
  Use only pressure-reducing valves with an outlet exhaust valve that limits the outlet pressure to approx. 5 bar in the event of failure.
- Connect the Oxylog 1000 to the pressure-reducing valve with the compressed gas hose.
- Open the cylinder valve by **turning slowly** as far as it will go.



Do not insert metering valves or flow meters in the O2 supply of the Oxylog 1000.
Risk of impaired function of the ventilator with consequent danger to the patient.

Determining the gas content of the O2 cylinder

Example:

Cylinder pressure measured at the pressure gauge of the pressure-reducing valve: 200 bar

O2 cylinder capacity: 2.5 L

Compressed gas content:
2.5 L x 200 bar = approx. 500 L

Estimated operating time of the Oxylog 1000

Example:

Freq. 10 bpm, V_T = 1 L, MV = 10 L/min

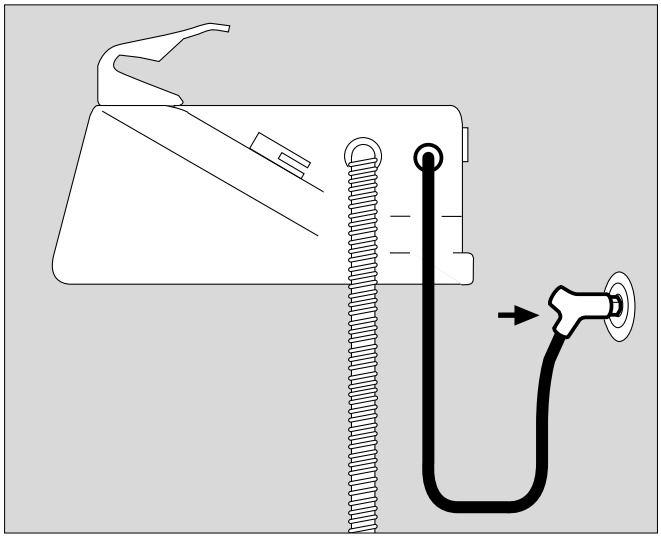
$$\text{Operating time} = \frac{\text{Compressed gas content, L}}{\text{(MV +1*) L/min}}$$

$$\text{Operating time} = \frac{500\ \text{L}}{11\ \text{L/min}} = \text{approx. 45 min.}$$

If Oxylog 1000 is switched to »Air Mix«, the gas consumption is reduced by about 50 %, thereby increasing the operating time to about 90 minutes.

For supply from a central O_2 supply

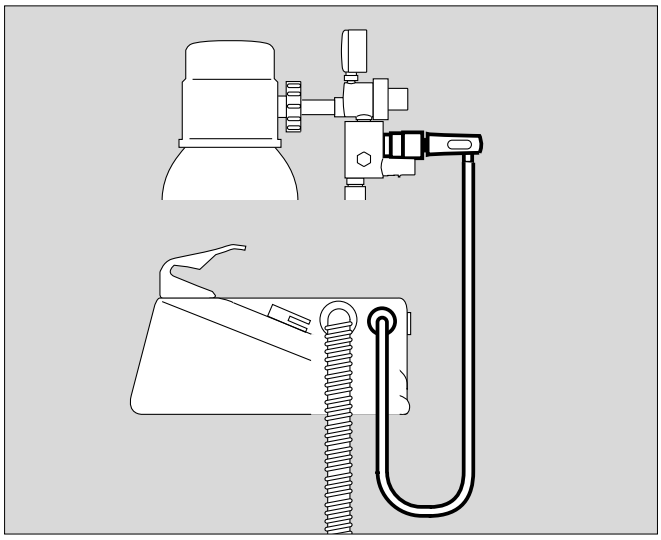
- Screw the compressed gas hose to the Oxylog 1000 and insert the gas connector in the O_2 supply socket.



For use with the Dräger Oxator

- Screw the O_2 compressed gas hose to the Oxylog 1000.
- Insert the gas connector securely into one of the two O_2 ports until it clicks into place.
- Strictly follow the Instructions for Use of the Oxator.

In exceptional cases, the Oxylog 1000 may also be supplied with compressed air, in which case the O_2 concentration is always 21% by volume.



* Intrinsic consumption of the device: approx. 1 L/min.

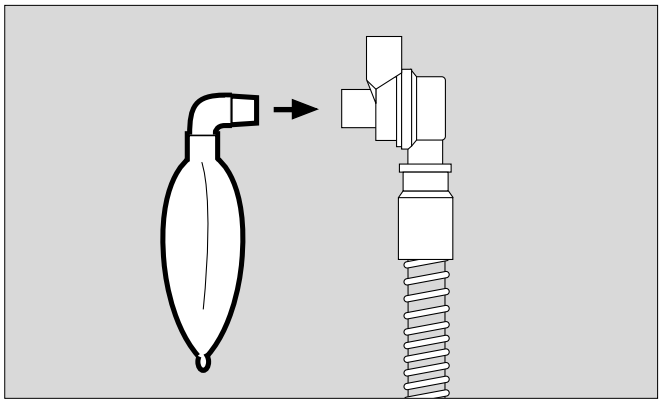
Checking readiness for operation

– after changing the ventilation valve,
– after each care and reassembly procedure,
– at the latest every 6 months.
● Record the test in the device logbook.

Connecting the test lung

The test lung consists of the mask elbow for connecting to the ventilation valve, the Ø7 catheter connector for simulating the resistance of the airways and a 2.3 L breathing bag to simulate lung compliance.

● Insert the mask elbow of the test lung in the patient connector of the ventilation valve.



Switch on the O_2 supply

● Open the O_2 cylinder supply by turning slowly as far as it will go

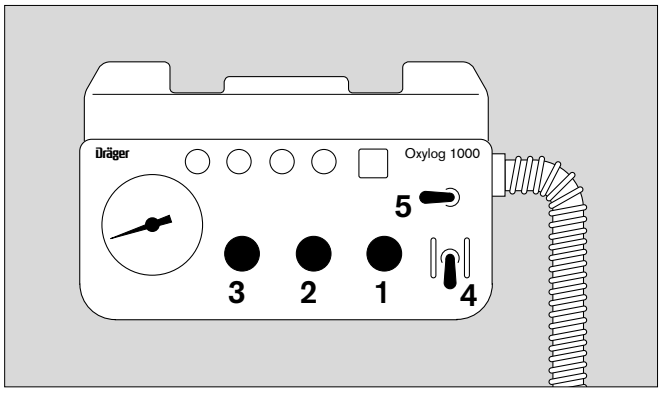
or

● insert the O_2 compressed gas connector in the supply socket until it clicks into place = tapping position.

Checking ventilation frequency Freq.

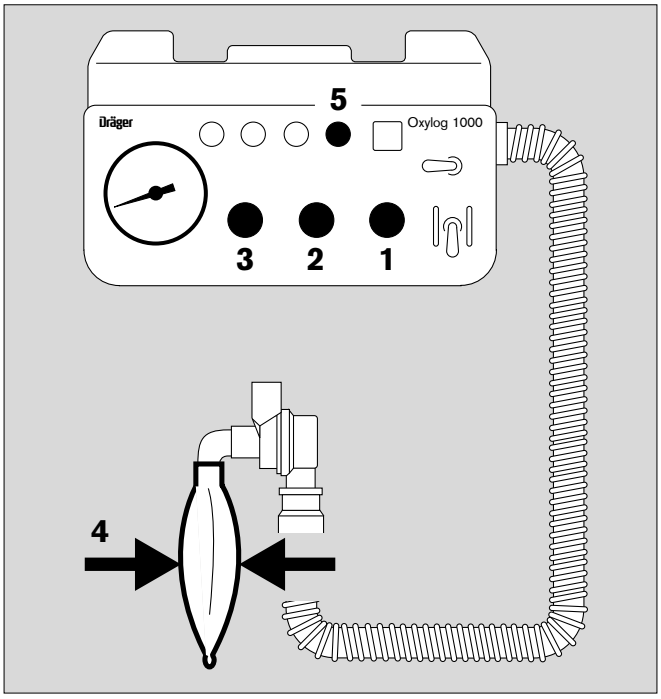
Set the ventilator:

1	»**MV**« knob	approx. 10 L/min
2	»**Freq.**« knob	approx. 20 bpm
3	»**Paw**« knob	approx. 55 mbar
4	Main switch	I (ON)
5	Switch	»No Air Mix«



● The Oxylog 1000 must ventilate the test lung at a rate of approx. 20 breaths per minute.

Testing the »Paw ⚠« alarm



1 Turn the »**MV**« knob to approx. 10 L/min.

2 Turn the »**Freq.**« knob to approx. 20 breaths per minute.

3 Turn the »**Paw**« knob to 40 mbar.

4 Hold the test lung in the squeezed position and watch the pressure gauge:

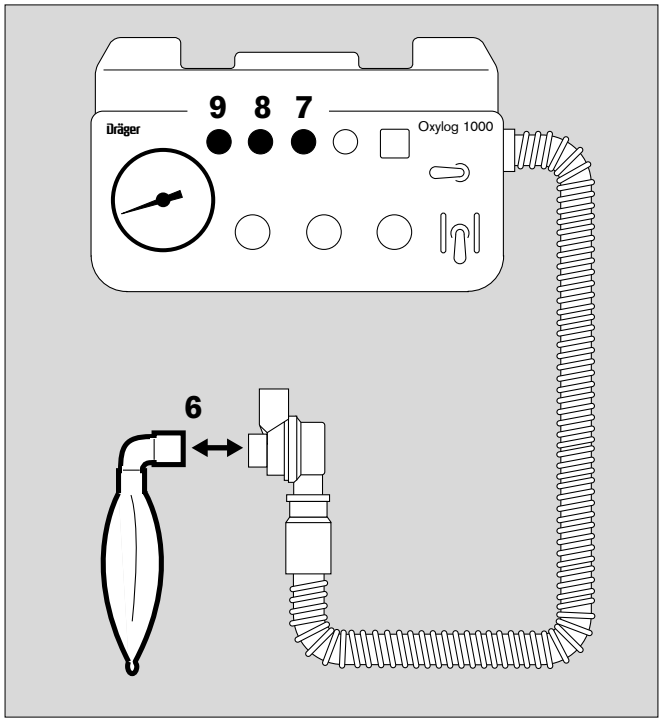
- Oxylog 1000 limits the airway pressure to approx. 40 mbar.

5 The »**Paw ⚠**« indicator turns red, and the audible alarm is sounded.

4 Release the test lung.

5 The »**Paw ⚠**« indicator and audible alarm are deactivated.

Testing the »Paw ⚠« alarm and audible alarm muting



With the existing setting

6 Remove the test lung from the ventilation valve:

7 The red »**Paw ⚠**« indicator is displayed, and the audible alarm is sounded.

8 Press the »**🔔**« button.

- The »**Paw ⚠**« remains red; the audible alarm is muted for about 2 minutes.

9 The indicator »**🔔**« turns yellow to indicate that the alarm tone has been muted for about 2 minutes.

After about 2 minutes:

- the audible alarm is reactivated.

6 Refit the test lung:

7 The »**Paw ⚠**« indicator and audible alarm are deactivated.

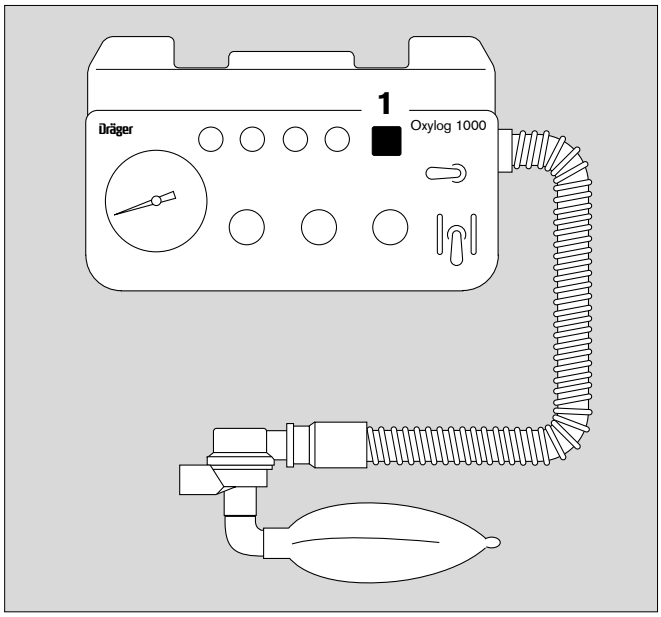
Checking the »Pv« alarm

- Switch off the gas supply.
  Close the cylinder valve or remove the compressed gas connector.

1 The colour of the »**Pv**« indicator changes from green to red.

- Restore the gas supply:

1 The colour of the »**Pv**« indicator changes from red to green.



After all tests have been successfully completed, the ventilator is ready for operation.

- Remove the test lung from the ventilation valve.

Troubleshooting

This table is intended to assist the user to detect the underlying cause in the event of an alarm and to remedy the situation rapidly.

Fault	Cause	Remedy
Ventilator does not build up any airway pressure	Gas capacity of O_2 cylinder fully spent	Immediately connect the ventilator to a full O_2 cylinder.
»**Pv**« indicator red	Supply pressure at ventilator inlet too low; no central gas supply or O_2 cylinder empty.	Establish sufficient supply pressure: 2.7 to 6 bar.
	Diaphragm in ventilation valve strained or deformed	Open the ventilation valve and assemble correctly, see page 14.
Ventilator remains on »Inspiration«	Supply pressure at ventilator inlet too low	Establish sufficient supply pressure: 2.7 to 6 bar.
	Oxylog 1000 faulty	Call Dräger Service.
Patient cannot exhale, or can only exhale with difficulty	Ventilation hose kinked	Route the ventilation hose without kinking it.
	Red non-return valve in the diaphragm is faulty or »creased«	Open the ventilation valve and assemble correctly, see page 14.
»**Paw** ↑« indicator red Audible alarm is sounded. The minute volume is not fully applied.	Stenosis in the airways	Free the airways.
	Ventilation hose kinked	Route the ventilation hose without kinking it.
	Lung compliance reduced	Set the »**Paw**« higher.
	Patient is "fighting the ventilator"	Change the ventilation pattern or sedate the patient.
»**Paw** ↓« indicator red Audible alarm is sounded.	Disconnection/leakage at the patient connection, ventilation valve or ventilation hose	Ensure that all connections are leakproof.
	Diaphragm of the ventilation valve incorrectly fitted or damaged	Mount the diaphragm correctly, or replace diaphragm if faulty – see page 14.
	Leaky cuff	Inflate the cuff and check for leaks.

Maintenance intervals

Clean and disinfect the ventilator or parts before each repair, even if returning components to the factory for repair.

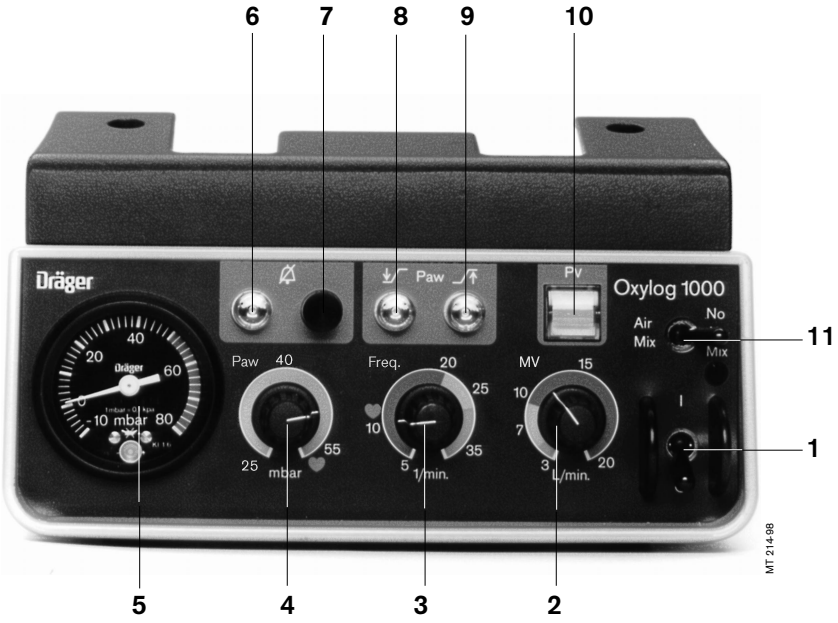
Inspection and servicing of the ventilator	Every 2 years by trained and qualified personnel.
Pressure-reducing valve	Major overhaul after 6 years by trained and qualified personnel.
Safety inspections	Every 2 years by trained and qualified personnel.

Disposal of the ventilator
at the end of its useful service life

Oxylog 1000 can be returned to Dräger Medizintechnik GmbH for suitable waste disposal.

What's what

Front view



1 Main switch **0/I**

2 »**MV**« rotary control knob for minute volume

3 »**Freq.**« rotary control knob for ventilation frequency

4 »**Paw**« rotary control knob for Paw ⎍ pressure limiting

5 Pressure gauge

6 Indicator »🔔«

7 »🔔« key for muting the audible alarm tone

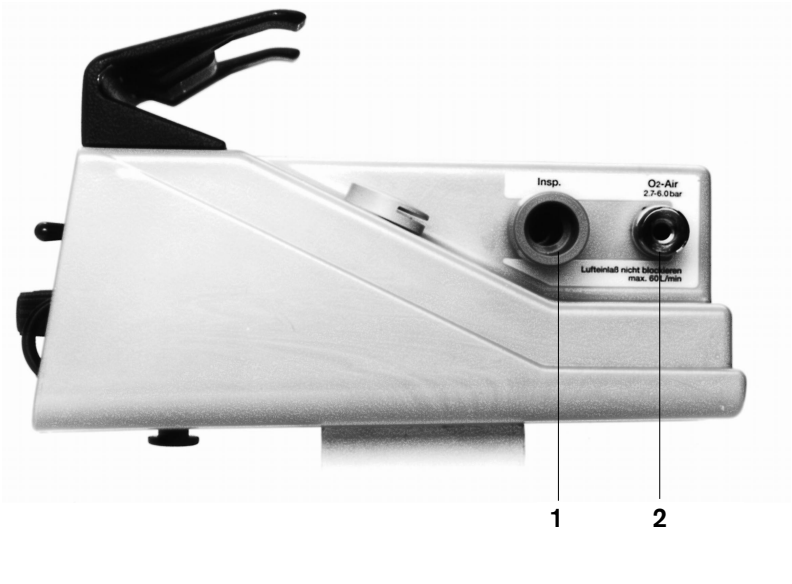
8 Indicator »**Paw**⎍« (Paw lower alarm limit)

9 Indicator »**Paw**⎍« (Paw upper alarm limit)

10 Indicator »**Pv**«

11 »**Air Mix / No Air Mix**« switch

Side view



1 Connection for ventilation hose and ventilation valve

2 Connection for O_2 compressed gas hose

Technical data

Environmental conditions

Operation	
Temperature	–18 to +50 °C
Atmospheric pressure	700 to 1100 hPa
Humidity	15 to 95 % r.h.
Storage	
Temperature	–18 to +70 °C
Atmospheric pressure	700 to 1100 hPa
Humidity	15 to 95 % r.h.

Performance characteristics

Operating principle	Flow chopper
Control	Timer-controlled, constant volume
Ventilation frequency	5 to 40 strokes/min ± 20 % but at least ± 2 strokes/min
Breathing time ratio	1 : 1.5 (fixed) ± 20 %
Minute volume	3 to 20 L/min ± 20 % but at least ± 1 L/min
O_2 concentration of the ventilation gas when supplied with O_2	
Switch set to »Air Mix«	60 % O_2 by vol. ±10 % for MV greater than 7 L/min for MV less than 7 L/min: the O_2 concentration increases up to 80 % O_2 by vol.
Switch set to »No Air Mix«	100 % O_2 by vol.
Max. ventilation pressure	approx. 25 to 55 mbar*
Safety valve	max. 80 ± 10 mbar
Pressure gauge	–10 to 80 mbar ±2.5 % of upper range limit
Main switch	I – O
Patient system	consisting of 1.5 m silicone hose with ventilation valve
Compliance	approx. 1 mL/mbar
Inspiration resistance	<6 mbar/L/s
Expiration resistance	<4 mbar/L/s
Clearance space	approx. 12 mL

* 1 mbar = 0,1 kPa

Alarms

Pv low	Alarm triggered when the supply pressure drops below 2.7 bar[1]. In the case of a slow pressure drop, an audible alarm is also activated.
Paw high	The visual and audible alarm are activated when the set value is exceeded. Range: 25 to 55 mbar ± 10%, but at least ±4 mbar
Paw low	The visual and audible alarm are triggered if a pressure of 10 mbar ± 3 is not exceeded during inspiration.
Alarm muting	The audible alarm can be muted for approx. 2 minutes.
Audible alarm volume	>75 dB(A) at a distance of 1 m

Gas supply

Supply gas	Medical O_2, In exceptional cases: compressed air
Conditioning of supply gas	Dry, oil-free, dust-free
Supply	From a central O_2 supply system or from compressed gas cylinders
Supply pressure	2.7 to 6.0 bar at 80 L/min
O_2 cylinders and pressure-reducing valves	Must conform to national safety standards and be duly certified
Pressure-reducing valves	Must have an exhaust valve on the outlet side to limit the outlet pressure to about 5 bar in the event of a fault
O_2 connection	M 15 x 1 external thread or NIST[2] by adapter
Gas consumption	
Internal control	approx. 1.0 L/min
Patient	
with »Air Mix«	approx. 60 % of the effective minute volume
with »No Air Mix«	100% of the effective minute volume
Typical operating time for a minute volume of 10 L/min	
with 11 L O_2 cylinder	approx. 200 minutes without mixing (No Air Mix) approx. 400 minutes with mixing (Air Mix)
with 2.5 L O_2 cylinder	approx. 45 minutes without mixing (No Air Mix) approx. 90 minutes with mixing (Air Mix)

1) 1 bar = 1 kPa x 100

2) NIST = Non Interchangeable Screw Thread

Operating noise Sound pressure level	48 dB (A) at distance of 1 m
Dimensions (WxHxD) mm	215 x 76 x 205 (without handle)
Weight of Oxylog 1000	3.8 kg

Materials used

Ventilator housing	Impact-resistant acrylonitrile butadiene styrene (ABS)
Ventilation hose	Silicone rubber
Ventilation valve housing	Polysulphone (PSU)
Ventilation valve diaphragms	Silicone rubber

Abbreviations and symbols

Alarm	Rotary control for upper alarm limit Paw $\nearrow^{\blacktriangle}$
Air Mix	Mixing of O_2 with ambient air, approx. 60 % O_2 by vol.
IPPV	**I**ntermittent **P**ositive **P**ressure **V**entilation
Freq.	Ventilation frequency, strokes per minute
MV	Minute volume, L/min.
No Air Mix	No mixing with ambient air, 100 % O_2 by volume
Paw	Airway pressure
Paw $\nearrow^{\blacktriangle}$	Upper alarm limit of airway pressure
Paw $\searrow_{\blacktriangledown}$	Lower alarm limit of airway pressure
PEEP	**P**ositive **E**nd **E**xspiratory **P**ressure
P_V	Supply pressure
♥	Setting symbol for ventilation rate and airway pressure during heart-lung resuscitation
🔕	Audible alarm tone muting

Appendix

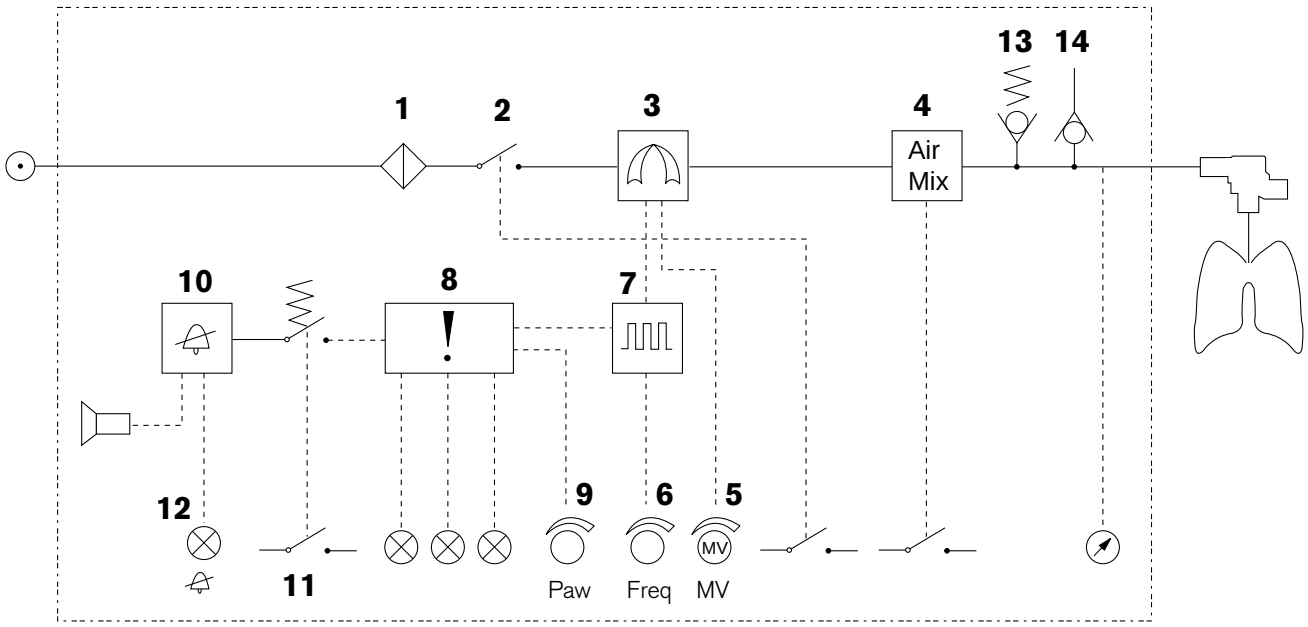
Tidal volume as a function of pressure in the "Air Mix" function

Oxylog 1000 supplies the air/O_2 mixture (Air Mix) by means of an injector that draws in additional air from the atmosphere to generate an air/O_2 mix with an O_2 concentration of about 60% volume.
Due to the laws of physics, the suction effect of injectors decreases with increasing airway pressure.
With high airway pressures, the tidal volume V_T set during the Air Mix function may be reduced, thereby increasing the O_2 concentration.
At airway pressures of 20 mbar, the set and applied tidal volume V_T are the same, and so the O_2 concentration is approx. 60 % O_2 by volume. At higher airway temperatures, the minute volume setting (MV) must be increased proportionately.

The applied minute volume is also dependent on the atmospheric pressure acting on the Oxylog 1000.
If the atmospheric pressure is reduced from 1000 mbar to 900 mbar, the supplied minute volume MV is increased by about 10%.

Oxylog 1000

Block circuit diagram



Function description of the Oxylog 1000 with reference to the block circuit diagram

The supply gas, O_2 (or compressed air), is channelled via the filter **1**, the on/off switch **2** to the ventilation block **3**, which can optionally be connected to the Air Mix module **4**.

The minute volume is set by the "MV" valve **5** and controls the ventilation block **3**.

The frequency is set by the "Freq" valve **6** and acts on the frequency control **7**, which is coupled to the alarm logic system **8**.

The maximum airway pressure (Pmax) is set with the "Paw" rotary knob **9** and opens a valve in the ventilation block **3**, so that the airway pressure is limited during inspiration.

The alarm logic **8** is connected to the "audible alarm muting control" **10** by push-button **11**. When button **11** is pressed, the yellow indicator **»🔔« 12** is displayed, and the audible alarm is suppressed for about 2 minutes.

The fixed additional pressure relief valve **13** opens at the defined pressure (approx. 80 mbar).

The emergency air valve **14** permits spontaneous breathing by the patient in the event of ventilator failure.

Order List

Name and description	**Part No.**
Basic unit	
Oxylog 1000 Timer-controlled, constant volume emergency ventilator with alarms for high and low airway pressure and low supply pressure. Pressure limiting can be set between 25 and 55 mbar.	2M 85 780
Ventilation accessories, comprising	
Ventilation hose, 1.5 m	21 65 643
Ventilation valve	84 06 600
Basic equipment:	
O_2 cylinder, GRP, 2 Ltr	B 10 205
O_2 cylinder, cast aluminium, 2.5/200, G 3/4 straight valve, filled	B 03 580
O_2 cylinder, cast aluminium, 2.0/200, G 3/4 straight valve, filled	B 02 352
O_2 cylinder, cast aluminium, 11/200, G 3/4 straight valve, filled	B 02 710
Pressure-reducing valve, Alduk I R 3/4	21 20 208
Pressure-reducing valve, Alduk II R 3/4	21 20 216
Hoses with screw fittings at both ends:	
O_2 pressure connecting hose 1.5 m	M 17 616
O_2 pressure connecting hose 3 m	M 17 617
with M15x1 screw fitting and plug-in connector for central supply socket	
O_2 pressure connecting hose 3 m (elbow connector)	M 29 243
O_2 pressure connecting hose 5 m (elbow connector)	M 29 263
Connecting hose 3 m Oxett/Oxylog 1000	M 25 879

Name and description	**Part No.**
Special accessories:	
Wrench, 32/22 a/f	M 12 401
Silicone mask No. 2	21 20 194
Silicone mask No. 5	21 20 186
PEEP valve (0 to 10 mbar)	84 07 475
Carry system 2000, complete	AB 40 461
Wall bracket for carry system 2000	AB 40 450
Carry system 1000, complete	2M 86 001
Wall bracket for carry system 1000	2M 86 103
Vehicle mounting kit	84 12 069
Test lung	84 03 201
Oxylog 1000 volume measuring system Additional equipment for measuring the exhaled volume, comprising: Volumeter 3000, clamp, silicone hose 1.1 m and 2 adapters	84 06 995
Volumeter 3000	2M 18 250
Adapter for Volumeter 3000	2M 85 967
Silicone hose, 1.5 m, ISO 22	21 65 643
Adapter for NIST	M 32 497

Technical documentation available on request

Index

Abbreviations..... 28
Abridged instructions for use..... 4
Accessories..... 3, 31

Before using for the first time..... 4

Central O_2 supply..... 17
Checking readiness for operation..... 18
Checklist..... 6
Connecting the O_2 supply..... 16

Determining operating time..... 17
Disinfecting/cleaning..... 12
Dismantling..... 11
Disposal of used ventilator..... 22
Dräger Oxator, use of..... 17

End of operation..... 10
Environmental conditions..... 25
Expiratory volume measuring..... 10

Front view..... 23

Heart-lung resuscitation..... 8

Immersion disinfecting..... 13
Installing the Oxylog 1000..... 15
Intended use..... 4
IPPV, using..... 7

Maintenance..... 3
Maintenance intervals..... 22
Materials..... 27
Minute volume..... 7, 10

Operating concept..... 5
Order list..... 31

PEEP testing..... 19
PEEP ventilation..... 9
Performance characteristics..... 25
Pressure, O_2 supply..... 18

Safety regulations..... 3
Side view..... 24
Sterilising..... 13
Symbols..... 28

Technical data..... 25
Test lung, connecting..... 18
Testing »Paw ⎍« alarm..... 19
Testing »Paw ⎎« alarm..... 19
Toxic environment..... 9
Troubleshooting..... 21

Ventilation valve, dismantling..... 12
Ventilation valve, mounting..... 14

What's what..... 23
Wipe disinfecting..... 13

These Instructions for Use apply only to
Oxylog 1000
with Serial No.:

If no Serial No. has been filled in by Dräger these Instructions for Use are provided for general information only and are not intended for use with any specific machine or device.

CE 0123
Directive 93/42/EEC
concerning Medical Devices

Dräger Medizintechnik GmbH
Germany
Moislinger Allee 53 – 55
D-23542 Lübeck
(4 51) 8 82 - 0
26 80 70
FAX (4 51) 8 82-20 80
http://www.draeger.com

90 29 060 - GA 5503.400 e
© Dräger Medizintechnik GmbH
3rd edition - August 1998
Subject to alteration